217

WORKING PLAN

PICKERING SALE CONTROL PROJECT

BADGER UNIT, MODOC NATIONAL FOREST

Season of 1931

by

T.D. WOODBURY, Asst.Reg.Forester
Forest Service
and
K. A. SALMAN
Agent, Bureau of Entomology

Berkeley, California
November 19 1931

Sent to
FCC
R.O.(2)
F.S.
Pickering
(3)
KAS
11 amended 11/30
11/23/31

WORKING PLAN
PICKERING SALE CONTROL PROJECT
BADGER UNIT, MODOC NATIONAL FOREST
Season of 1931

Contents

Page

Introduction - - - - - - - - - - - - - - - - - - 1

Areas Selected for Control Work - - - - - - - -1

Infestation- - - - - - - - - - - - - - - - - - 1

Organization of the Project - - - - - - - - - -2

Responsibility and Administration - - - - - 2
Costs and Accounting - - - - - - - - - - - -2
General Comment - - - - - - - - - - - - - - 3

Spotting- - - - - - - - - - - - - - - - - - - -3

Trees to be Marked for Treatment - - - - - - - 5

Treating- - - - - - - - - - - - - - - - - - - -6

Reports- 6

Map

WORKING PLAN
PICKERING SALE CONTROL PROJECT
BADGER UNIT, MODOC NATIONAL FOREST
Season of 1931

Introduction

After reaching a low ebb in 1930, the infestation in the Happy Camp-Lava Beds area of the Modoc National Forest made a sharp upward turn during the summer of 1931. A survey of the situation during the period of September 14-19, 1931, by representatives of the Pickering Lumber Company, U.S. Forest Service and U.S. Bureau of Entomology, determined it was evident that the infestation was at the beginning of another period of epidemic conditions; that the chief centers of infestation lay in the Badger Unit of the Pickering Sale area; and that if further losses are to be avoided, control work would be advisable during the fall and winter of 1931.

Areas Selected for Control Work

Two areas containing the heavier centers of infestation, and in which control work is considered necessary, are shown on the map accompanying this plan. The larger, lying in Townships 43 and 44 N, Ranges 7 and 8 E, contains about 36,000 acres. The smaller, in T. 43 N, R. 7 E, contains about 3,600 acres. There are no natural topographic features providing boundaries for these areas, and it is suggested that the boundaries of the spotting work and, if the infestation warrants, of the control work, be extended to the section lines near the boundary of the more heavily infested area, as shown on the accompanying map.

If the Red River Lumber Company cooperates in this project by conducting control operations on its lands in T 44 N, R 7 E, it would be advisable to extend the project boundaries to the west, as shown by the dotted lines on the map. If such cooperation is not secured, the range line between Ranges 7 and 8 should be the western boundary of the project.

Infestation

The infestation in the area for which control is recommended is estimated to have killed about 1.8 per cent of the total stand on the area in 1931--an increase of 172 per cent over the figures of loss for 1930 on the same areas that served as a basis for the estimate. The infestation is primarily one caused by the destructive western pine beetle; and on the control area it was estimated in September that it would be necessary to treat about 2,800 winter brood trees, having a total volume of approximately 2,575 M. B.M. As insect attack had not ceased for the season at the time the survey was made, it is entirely possible that the estimates will prove to be low, for the season has been particularly favorable for the insects.

Organization of the Project

Responsibility and Administration

Full responsibility for conducting the project rests with the Pickering Lumber Company representative. This responsibility includes the employment of labor, assignment of crews etc. The Forest Service will furnish an inspector who will see that the work is properly done on National Forest land and will also cooperate in all other phases of the job, particularly the spotting work. This representative will determine the volume table that shall be used in computing the volume of trees treated, and also assure himself that these volumes are properly computed. In addition, the Forest Supervisor of the Modoc National Forest will cooperate in every possible way toward making the project a complete success. Such cooperation will include advice regarding minor questions that must be decided on the ground, furnishing available Forest Service equipment in emergencies etc. Maintenance and repair of any Forest Service equipment furnished will be charged against the allotment for the job.

Costs and Accounting

Neither the Forest Service nor the Pickering Lumber Company will charge any overhead against the allotment for the job, other than the men who are actually in charge of the work on the ground. The Forest Service inspector's salary will be a cost charge against the job whenever he is engaged in actual productive work on the project. His salary will not be an allotment charge against the work, since he is employed on a yearlong basis and his salary has already been provided for from other funds.

The Pickering Lumber Company will furnish a cost accountant to handle the cost-keeping work. This accountant should have available a copy of the insect control agreement, and should keep the cost records in accordance with Paragraphs 4, 5 and 6 of this agreement. He should maintain a classified record of expenditures actually incurred on the job, which will be paid for out of funds set up for the work. The classification which should be used is given in the agreement above referred to. Any charges included as payment or reimbursement to the Pickering Lumber Company for services or facilities furnished should be supported by a separate statement giving details of these charges. All records and bills should be segregated and retained by the Pickering Lumber Company for ready reference and inspection in case the Comptroller General asks for additional detailed information when the final audit of the Pickering Lumber Company's claim is made.

General Comment

In preparing this working plan it has been borne in mind that the men who will be in charge of the work have had considerable experiance in insect control. In view of this it is felt that detailed instructions regarding minor points would be more of a hindrance than a help, since conditions on the ground must often govern the decision as to minor problems which arise. In determining the size of crews it is well to employ a sufficient number of men to complete the project during favorable working conditions. A Bureau of Entomology representative is planning to visit the job soon after it starts, in order to give as much technical advice and general assistance as possible.

Spotting

This phase of the work consists in locating the infested trees needing treatment, marking them with a serial number on a sapwood blaze so that they will be recognized by the treating crews, mapping their position accurately on an 8"-scale map, directing or guiding the treating crews to the marked trees, inspecting the work to see that all marked trees have been found and properly treated, and checking and compiling the records so that they will be correct. This is one of the first jobs to be done on a project, and the success of the project is dependent on the thoroughness with which the work is accomplished.

The spotting crew will consist of a compassman and two spotters. The strip cruise method will be used, a 100 per cent cruise made, and each strip tied in with land lines.

The compassman will determine the direction of the cruise line, and will serve as a guide for the spotters. He will make a spotting map of the area on an 8"-scale form, upon which he will place, in their proper locations, the serial numbers of the infested trees marked for treatment. Equipment carried by the compassman is as follows:

Box or staff compass
Supply of map sheets with section outlines on scale of 8" to mile
Tatum holder for map sheets
Tally registers etc. are optional

The spotters will cruise a strip $2\frac{1}{2}$ chains wide on each side of the compassman, the crew covering a strip 5 chains wide on each cruise strip. The spotters will locate infested trees suitable for treatment, blaze them to the sapwood, mark them with a serial number for treatment and make out a tree record for each tree. A sample tree record is as follows:

Project area No. Modoc Unit Badger Tree No. 376

Killed by D.b.

Year 1931 { Summer brood / Winter brood x

Location

Forty Sec. 13 T. 44N R. 8E

Owner Govt.

	D. BREV.	D. MONT.	IPS.	FH
Attack				
Parent adult				
Eggs				
Larvæ 0 to .5	x			
Larvæ .5 to 1	x			x
Pupæ				
New adults				
Emerging				
Abandoned				
Infested length				

FOLIAGE
Green
Fading x
Sorrel x
Red
Black

Yellow pine x
Sugar pine

D. B. H. 36
No. 16-ft. logs 5
B. F.

Remarks: Old spiketop; heavy brood D.b.

8—5223

Date 11/25/31 Camp No.

Spotter J. SMITH.

They will communicate the location and number of the marked tree to the compassman, who will place number and location on the map.

Equipment carried by the spotters is as follows:

Light axe for blazing and examining trees
Black carbon crayon for marking serial number on trees
Supply of 3x5 tree-record forms

The spotting crew will check over and keep correct the records of trees spotted, and will also check over the records of trees treated. They will make duplicate lists of infested trees on spotting record sheets and duplicate maps for the use of the camp foreman in placing his crews.

The Bureau of Entomology has a series of seven study plots in the area to be treated. If tree records (duplicates) for all trees marked on these plots are furnished them, and a record of the actual number of trees treated on the plot is also given, it will be appreciated. A system of numbering trees, consisting of a year number (for example 31) and a serial tree number (5,6 etc.), has been used on the plots. If convenient, it would be appreciated if this system were followed on the plots. The following list gives the location of the plots and the highest numbers used this year in the 1931 series. The next highest number should be used in marking trees in this cruise:

T 44 N, R 8 E, W½ Sec.16; high no. 31-82
T 43 N, R 7 E, S½ " 22; " 31-54
T 44 N, R 8 E, S½ " 13; " 31-43
T 44 N, R 8 E, N½ " 35; " 31-50
T 43 N, R 8 E, W½ " 10; " 31-38
T 44 N, R 8 E, NE¼ " 36; " 31-11
T 44 N, R 8 E, SE¼ " 25; " 31--5

Trees to be Marked for Treatment

Trees requiring treatment may have discolored or green foliage. Foliage phases and discolorations, pitch tubes, woodpecker work or any other indication of insect attack will have to be utilized in spotting the trees.

In the type of tree having discolored foliage the following types should be marked for treatment:

1. Trees containing good broods of the western pine beetle in any stage. The majority of the trees will probably have brood in the egg, young-larval or fullgrown-larval stage. Such trees contain the bulk of the winter brood and should be marked for treatment.

2. Trees with green, normal conditions at the base, but with dying or fading foliage in the crown (usually near the top) and indications of attack, such as pitch tubes, in the bole out of reach, or woodpecker work, should also be marked if it is evident that over one-half of the bole has been attacked and contains brood. Many trees are top-killed in this area, others have old top kill; and in general flathead borers, Ips or natural causes have created that condition. Determination of the necessity for treating trees of this type will require experience and judgment, for it does not pay to treat trees suffering chiefly from flathead or Ips attacks if the western pine beetle is not associated with those insects; in many cases such trees recover and suffer no greater damage. The final decision must rest with the spotter, and his judgment must depend upon whether or not he believes or finds evidence that sufficient insect population is in the tree to justify treatment.

Trees in which only a small portion of the crown has faded, and in which there is no evidence of a sufficient insect population, should not be marked for treatment. Trees of the late summer attack in which only a few late larvae, pupae or adults occur also do not justify treatment, and trees from which the brood has emerged should be left unmarked by the spotters.

Often, particularly in cases where groups of trees are attacked, surrounding trees will contain brood but will show no evidence, so far as fading of the foliage is concerned. Care must be taken to examine trees in the vicinity of fading insect-infested trees to determine if they contain brood; and if it is apparent that there is a sufficient insect population they should be marked for treatment. Care must be taken, especially at the start of the spotting work, to examine the green trees; for there is no way of knowing at the present time if a large number of trees were attacked late in the fall and thus have not yet faded. If cruises are made utilizing only foliage phases, and the infestation is one largely caused by late fall attacks, it would be possible to miss the greater portion of the winter brood in the spotting work.

Treating

All infested trees marked for treatment will be treated by using the partial peeling and burning method. The trees are felled, limbed, and the bark peeled on the upper half of the log. The debris and bark, limbs etc. are piled next the bole, an adequate fire line is made around the tree (but not including the stump), and the entire tree is burned. No burning should be done under dangerous fire conditions.

Reports

The Bureau of Entomology has been conducting and will in all probability continue insect surveys and studies in the Modoc National Forest, of which this control area is a part. Records as to the number of trees treated, volume treated, acreage covered and other data are not only of interest to the Bureau, but are of value to all agencies concerned with the project in determining the actual effectiveness of the control measures in future years. Accordingly a joint report will be prepared by the Pickering Lumber Company and Forest Service representatives as soon as possible after the close of the work. This report should follow one of the outlines given in Keen's Manual of Bark Beetle Control. At least five copies should be written and distributed as follows: Supervisor's office, 1; Regional Office, 2; Pickering Lumber Company, 1; Bureau of Entomology, 1.

PICKERING SALE AREA
CONTROL PROJECT
MODOC NATIONAL FOREST
SEASON OF 1931
Boundaries of Control Work
Boundaries of Control Work Under Alternate Plan
R6E
R7E
R8E
R9E
T44N
T43N
T42N
T41N
Double Head
5537
Dry Pond
Lone Pine Butte
Mowitz Butte
5300 ADB
Reservoir
Surveyor's Valley
Round Valley
Triangle
Badger Spg.
Corral
Duncan House Camp
Timber Mt.
Deer Hill
Brown's Well
6400'
Lost Valley
Antelope Plains
Fairchild Swamp
Widow Valley
Log House
Bucher Swamp
Jacks Swa
Juquina Reservoir
DEER HILL R.S.
Hogback
Rail Mt.
Williams Reservoir
Dobe Swale
Spauldings Reservoir
Duncan Reservoir
Mud Lake
Mud Spg.
Water
Lava Lake
Water Hole
HAPPY CAMP R.S.
Grouse Spg.
Happy Camp Lookout
6239
Spg.
Casen Spg.
Canby
WARM SPRINGS
PIT RIVER R.S.
LAVA R.S.
Sugar Pine Ridge
Crank Spg.
Egg Lake
Reservoir
Ballard
Pot Hole Valley
Pot Hole Spring
Blue Mt. Lookout
OSTRAM R.S.
BOLES
Boles Meadow
Coyote Spg.
Willow Creek
Black Canyon
Clover Swale
Stateway
Standard